EU Twinning Project

IS12/ENP-APFI/08

Support to the Israeli Central Bureau of Statistics in the development of National Accounts, Education Statistics, Survey Methodology, CBS Website and Coordination of Israel National Statistical System

Component A

National Accounts

Activity A.14

Study visit on environmental accounts

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הלשכה המרכזית לסטטיסטיקה
Central Bureau of Statistics
دائرة الإحصاء المركزية

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List of Abbreviations

BC	Beneficiary Country (Israel)
CBS	Central Bureau of Statistics (Israel)
MS	Member State
GHG	Greenhouse gases
EPE	Environmental Protection Expenditures

1 Summary

The study visit to Finland was aimed to learn and share knowledge with Statistics Finland on the development of environmental accounts in the field of energy, air emissions, greenhouse gases and environmental protection expenditures (EPE).

The CBS is at a starting point of developing several environmental accounts and some elements are required in the development process.

Structures of environmental accounts were presented, as well as the components of environmental accounts and the required information for constructing them. Different methodologies were shown and the differences between them were elaborated. A tool was presented to analyze the relationship between material flows, the environment and the economy.

Integrating various data sources into a harmonized system– the construction process of environmental accounting was introduced: The different sources of information and how to combine them together; the difficulties that were encountered in Israel and the alternative solutions as they emerge from the experience in Finland.

Presentation and use of information - Environmental accounts are intended to inform the public and provide information for decision makers. The publications of Statistics Finland present the information on the environmental accounts and the indictors which were constructed to examine the environmental conditions within a comparative framework.

2 Background

Environmental Accounts

The CBS is responsible for the calculation and dissemination of environmental statistics, including air emissions, GHG, waste, water and wastewater, EPR and biodiversity. In recent years the need to integrate these statistics into an economic framework has increased. The Ministry of Environmental Protection as well as the academia and International organizations promote the development of environmental accounts that present the environmental pressure of the various industries on the one hand, and their efforts to minimize the environmental impacts on the other hand. These accounts enable the calculation of various indicators that form the knowledge base for green growth strategy. The CBS introduced its first water account in 2010 and is planning to develop additional accounts:

Air Emissions and GHG Accounts

Data for air pollution (from fuel combustion) and GHG emissions exist in Israel by industry and therefore this topic was selected as high priority for development. The data sources include administrative data, Input-Output data and surveys data. However, some problems and gaps exist, including difference in level of detail, quality and timeliness of data sources and missing data.

At present, emission inventories are prepared on an annual basis, with a breakdown by IPCC sectors, fuels and user sectors. The required air accounts need to detail the data by industry and to cover emissions not only from fuel combustion and IPCC sector activities. The CBS needs to decide how to collect and integrate information from different sources in order to produce a complete set of air and GHG Accounts.

Although the CBS has made progress in implementing international recommendations and improving the GHG inventory and air pollution statistics, some questions remain opened and there was a need to discuss them during the Twinning project.

EPR
The CBS prepares on an annual basis reports on the environmental expenditure of the public sector and the manufacturing industries (including electricity). These reports are adapted to international standards. However, there is a need to broaden the scope, include additional sectors, and report additional information, such as environmental taxes, which are not currently collected.

The goal of this Twinning activity was to help define the data sources that can be used to broaden the scope of the EPE in Israel, to learn from the experience of the EU and to adopt new methods to produce better estimates for these accounts.

Waste Accounts
Very few EU countries have waste accounts, and waste accounts were not dealt with during the A.14 mission. Waste statistics were covered during the study visit to Vienna in the framework of the ENPI-SEIS project. This study visit dealt with the following topics:

- Electronic data management system (EDM), which manages and controls the waste industry in Austria. This system provides detailed data on waste streams and waste treatment and is used to generate waste statistics after data control.
- PRTR data are partial and could be helpful for comparison and data validation purposes but cannot provide detailed statistical data.
- Household waste data are available in Austria due to waste collection fee that is charged by the number of waste containers.
- Waste incineration technologies in Austria were presented.
- Estimation methods for recycling ratios were introduced.

2.1 Mandatory results of activities A.12, A.13 and A.14

(a) Definition of the structure of waste and air environmental accounts

2.2 Terms of Reference - purpose and expected output of A.14 activity

Purpose
Presentation on the compilation of environment accounts in Finland and their usage, and how this experience can be used as an inspiration for future work in Israel.

Expected output
Report from ICBS participants on knowledge gained, and how this can be used as inspiration for methods used in Israel.

Specific subjects to be elaborated

(a) overview of the Environmental Accounts

(b) Energy accounts and Air emission accounts

(c) physical input-output tables

(d) Environmental expenditures account

(e) Dissemination of environmental accounts

(f) Water accounts in Israel

3 Activity Results

The following organizational and methodological issues have been learned during the study visit:

3.2 Energy, Air emissions and GHG accounts:

3.2.1. Statistics Finland calculates annually physical and financial input-output tables of energy consumption. The calculation of input-output tables is prepared on the basis of high quality administrative files, coming from individual reports of plants for energy production processes. This detailed information allows the preparation of accounts and reduces the need for dedicated surveys. Those tables are the base for the calculation of Air emissions and GHG accounts. The motivation of producing these accounts is the EU regulation.

3.2.2. The supply-use tables include different types of energy and their structure is based on the System of Environmental-Economic Accounting (SEEA). There is detailed information on the types of energy-related activities (inputs, products, residuals) and economy branches (64 branches, or economic activities,in NACE classification, households, import and export).

3.2.3. In order to build energy accounts, integrated information from various sources is needed: Statistics of energy, input-output tables, customs and other information. Due to the many sources that exist, the construction of energy account and the development of methodology are carried out with the cooperation of representatives from various fields: energy, air pollution, greenhouse gas emissions and environmental experts. In this way, physical, monetary and environmental aspects are taken into account. Statistics Finland is facing some challenges including isolating data for the service sector, calculation of transport emissions, taking into account trans-boundary transport.

3.2.4. Statistics Finland presented their physical flow accounts: Physical input-output tables (PIOT), Input-output tables and Economy-wide material flow accounts. They show the concept, principles and use of those tables. Results shown and some material flow indicators. Analysis of the data presented and the conclusions which allow identifying the sources of environmental pressures.

3.2.5. During the study visit, there was a discussion about the environment accounts in Israel. The CBS presented the existing situation, the progress made, the difficulties and possibilities to resolve them. Statistics Finland presented similar difficulties that were encountered and suggested some solutions:

a) Fuel data obtained from the survey conducted in Israel showed that in a certain sector the quantities of fuel are relatively high to the total known consumption – (99% of the known consumption). In Finland there is a similar situation arising from different data sources with different quality. The recommendation: check sources with large values due to the weighting factors or high reports, and compare to previous periods. Statistics Finland carries out periodically (every few years) a complete census of a particular industry to verify the surveys do not deviate far from reality.

b) In Finland, as well as in Israel, there are companies that work in various fields - power generation, industrial, and other residual heat. The question is how to classify them in terms of their economic activity. Usually this is determined by business registry classification. In Israel, some companies are generating power in addition to energy consumption for industrial production.

c) In Israel there are two types of diesel fuel – for transportation and for industry. Diesel fuel for transportation is also used for the production in the industry and it is difficult to distinguish between the different types. In

Finland there is a similar problem of heavy equipment where diesel consumption is difficult to identify.

3.2.6. The air emissions and GHG emissions are calculated from many sources: Monetary input-output tables, working machines are allocated with the models from Technical Research Centre of Finland, Finnish Environment Institute, expert estimation etc. there is combining of many sources and there are difficulties to combine "bottom-up" fuel data and data from other sources (top-down).

3.3 Environmental expenditures account:

3.3.1 Two different units collect and publish data on environmental protection expenditure in the public sector and in manufacturing industries. These accounts methodology is based on the methodology of Eurostat. There is no data collection from other economic sectors such as trade and services. The data are reported to the OECD and the EU.

3.3.2 Statistics Finland produces an annual publication on various environmental issues which presents "hybrid" tables of environmental data along with economic, demographics etc. These tables enable various comparisons and the production of several interesting environmental indicators

3.3.3 Statistics Finland presented the calculation of "environmental taxes". Environmental protection expenditure is defined as expenditure that is directly related to environmental protection activities. With this regard, taxes are included as expenses when they are designed for environmental action - such as waste management fee for the treatment of waste. Unlike these definitions, an environmental tax is defined with no relevance to the purpose of the tax. For example, a tax on fuel is defined as an environmental tax in spite of the fact that this tax is not used to protect the environment but is a source of income to the state budget.

4 Conclusions and Recommendations

(a) The difficulties that the CBS is facing regarding environmental accounts are somewhat similar to these of Statistics Finland, and also the solutions are in a similar direction. However, Finland has a more detailed database and data sources due to the EU and country regulations.

(b) One of the strengths found in the Statistics Finland, is the broad collaboration between the various parties taking part in the calculation of emissions. The calculation of emissions in Finland is decentralized and is done by different sources, coordinated by joint working groups. Similararly, the CBS needs to develop working groups on various issues: emissions of air pollutants, greenhouse gas emissions by category: waste, agriculture, industrial processes, in order to improve the quality of the statistics and improve the interactions with data users.

(c) There could be an integrated publication that includes environment and supplementary information (economic and demographic) that will enable the production of relevant indicators.

(d) There is a need to develop an "environmental tax" database along with the environmental protection expenditure account, according to international standards, in order to meet the requirements of the OECD.

5 Other Comments

(a) The study visit was organized on the highest level with very comprehensive and efficient program. The presentations were very detailed and clear. A lot of methodological issues

were discussed. The consultations which were provided were very professional. All our questions were explained and provided with examples.

(b) Last but not least, we would like to note the warm friendly atmosphere of the visit, which made the study visit not only educational, but also pleasurable.

6 Annexes

Annex A14.1 Programme

Date	Time	Event
Mon 25/8	09:00	Introduction to Statistics Finland, practical matters, agenda *Mr Ari Tyrkkö, Ms Ulla-Maarit Saarinen*
		Organisation and dissemination of environmental accounts *Mr Ville Vertanen*
	12:00	Lunch
	13:00-16:00	Physical input-output tables (PIOT) approach Studies and applications in Finland *Mr Jukka Muukkonen, Mr Markku Räty*
		Economy-wide material flow accounts *Mr Jukka Muukkonen*
		Energy Accounts *Ms Niina Autio, Mr Jukka Muukkonen*
Tue 26/8	09:00	Situation in the Twinning sub-component environmental accounting *ICBS*
		Water accounts in Israel *ICBS*
		Environmental administration as a user and co-operator for environmental accounting *Ministry of the Environment* *Finnish Environmental Institute*
	12:00	Lunch
	13:00-18:00	Introduction to Finnish environmental assets and material flows *Environmental Accounts team of Statistics Finland*
Wed 27/8	09:00	Air emission accounts *Ms Niina Autio*
		Greenhouse gas inventory *Mr Kari Grönfors*
		Environmental taxes *Ms Niina Autio*
	12:00	Lunch
	13:00-15:30	Environmental expenditures of industry *Ms Eila Salomaa*
		Environmental expenditures of public sector *Ms Merja Eskelinen*

Annex A14.2 Persons met

Participants of Statistics Finland

Mr Ari Tyrkkö, Head, Co-ordination and International Activities
Office of Director General
Ms Ulla-Maarit Saarinen, Planning Officer
Office of Director General
Mr Jukka Muukkonen, Senior Statistician
Environmental accounts team, Economic and Environmental Statistics Unit
Mr Ville Vertanen, Head of Statistics
Environment and Energy, Economic and Environmental Statistics Unit
Mr Markku Räty, Senior Statistician
National accounts, Economic and Environmental Statistics Unit
Ms Niina Autio, Senior Statistician
Environmental accounts team, Economic and Environmental Statistics Unit
Mr Kari Grönfors, Senior Statistician
Greenhouse Gas Inventory, Economic and Environmental Statistics Unit
Ms Eila Salomaa, Senior Statistician
Environmental accounts team, Economic and Environmental Statistics Unit
Ms Merja Eskelinen, Senior Statistician
Environmental accounts team, Economic and Environmental Statistics Unit
Ms Annika Miettinen, Senior Statistician
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